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P/No..6806-0575-01A

- Before attempting to operate this product, please read the instructions carefully.



- ENGLISH
- ESPAÑOL
- 日本語

22x SPEED DOME CAMERA

Operation/Programming

SPD-2200



Thank you for purchasing a **SAMSUNG CCTV CAMERA**.
 Before operating the camera, confirm the camera model and proper input power voltage. In order that you can understand this manual thoroughly, we'll introduce our model description.

■ Model Description

SPD-2200 x

Signal System

- Signal System
 - N → NTSC Model
 - P → PAL Model

| | | |
|---|---|---|
|  | CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN |  |
| <p>CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK), NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p> | | |



The lightning flash with an arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INFORMATION - This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING - Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

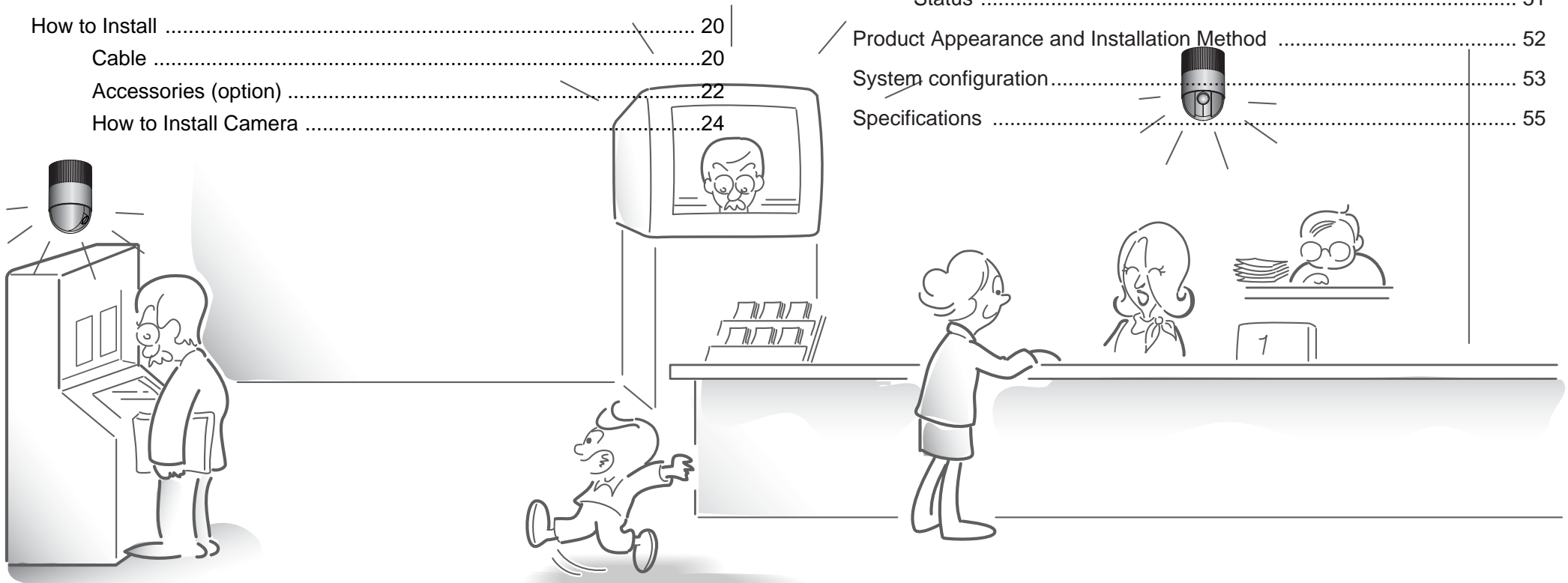
CAUTION : To prevent electric shock and risk of fire hazards:

- ◆ Do NOT use power sources other than that specified.
- ◆ Do NOT expose this appliance to rain or moisture.

This installation should be made by a qualified service person and should conform to all local codes.

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Warning & Caution

Please read the instructions carefully for correct use of the product, and observe these cautions to prevent danger or physical damage while operating it.


Warning / Caution


 **Warning** If you fail to read this information, or handle the product incorrectly, death or serious injury may result.

 **Caution** If you fail to read this information, or handle the product incorrectly, serious injury or physical damage may result.

Sign

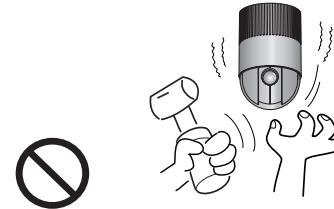
 Not allowed.

 No disassembly.

 Be sure to keep this.

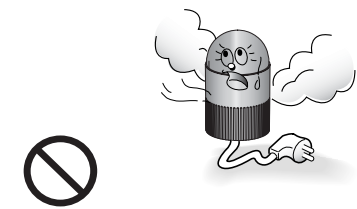
Warning

The unit should be installed by trained personnel.



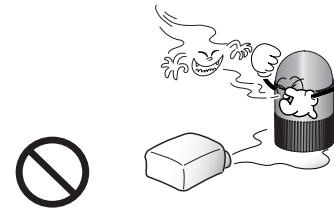
Installation by unskilled personnel without sufficient experience or expertise may result in fire or electric shock. Always ask your sales agent to perform installation.

Always stop using the product if it emits smoke or becomes unusually hot.



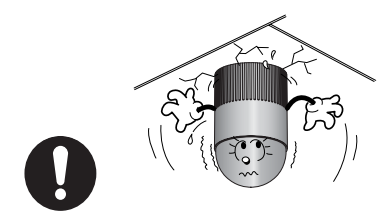
Continuing to use it under such circumstances may result in fire.

Never install the product in areas exposed to water, oil or gas.



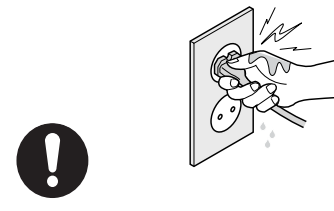
Doing so may result in malfunctions, electric shock or fire.

Never install the product on a ceiling that is not strong enough to bear its weight.



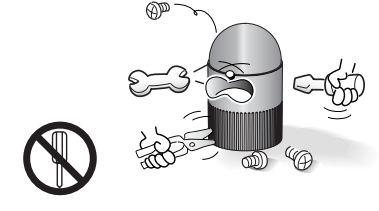
The product may fall.

Never touch the power cord with wet hands.



Touching the power cord with wet hands may result in electric shock.

Never disassemble the product or insert foreign bodies into it.



Malfunction may result.

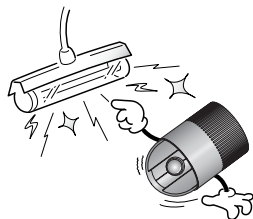
! Caution

Never install the product in locations with extreme high or low temperature.



Installing the product in areas subject to temperatures of over 50°C or below 0°C may result in deterioration of picture quality or other problems. Pay special attention to ventilation when installing the product in high ambient temperatures.

Never install the product in places where the lighting conditions fluctuate.



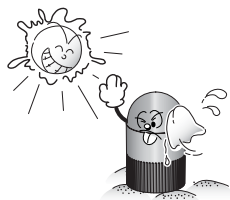
Frequent changes of illumination, for example from unstable fluorescent lighting, may result in malfunction.

Never drop the product, or subject it to severe impact or vibration.



Malfunction may result.

Never expose the product to direct sunlight or harmful rays.



Direct sunlight or harmful rays may cause fatal damage to the CCD or internal circuitry.

Never touch the glass on the front of the product.



This glass is one of the key components. Be careful not to leave fingerprints or other marks on the glass.

Never install the product in areas exposed to rain or water.



If water gets into the product it may cause failure.

Main Features



Auto-focusing 22x Zoom lens

The digital zoom function of the built-in 22x zoom lens, together with its auto-focus feature, zooms an image by up to 220x.



Various auto-surveillance functions

- PTZ trace
Manually plays recorded images of up to about 120 seconds.
- Auto swing
Repeats pan and tilt between two preset positions.
- Group sequence
Switches to and checks a maximum of 128 preset positions in order.
- Tour sequence
Switches to and checks a maximum of 6 group sequences in order.



Smart P/T function

Pan and tilt speed compensation function linked to zoom position allows fine manual operation even during zooming.



Area Masking for 8 points

Area Masking can be set up for up to 8 points. For Privacy, this device provides a function for hiding the points for which Area Masking is selected from the screen.



Day & Night function

Slow-shutter and day and night switching enable optimum screen monitoring over 24 hours.

- * Slow-shutter function improves CCD sensitivity by electrically lengthening exposure time.
- * Day & Night function enables the color and black and white screens to be used respectively during the day and at night.



OSD (On Screen Display) function

Provides character information displayed on the monitor, such as the camera ID address, camera name, preset number, preset name, area name and sequence status, and easily sets various camera functions from the OSD menu screen.



Home Position Auto Return function

Returns the dome to a specified preset position at a fixed time after ending manual operation.



128 Preset Positions

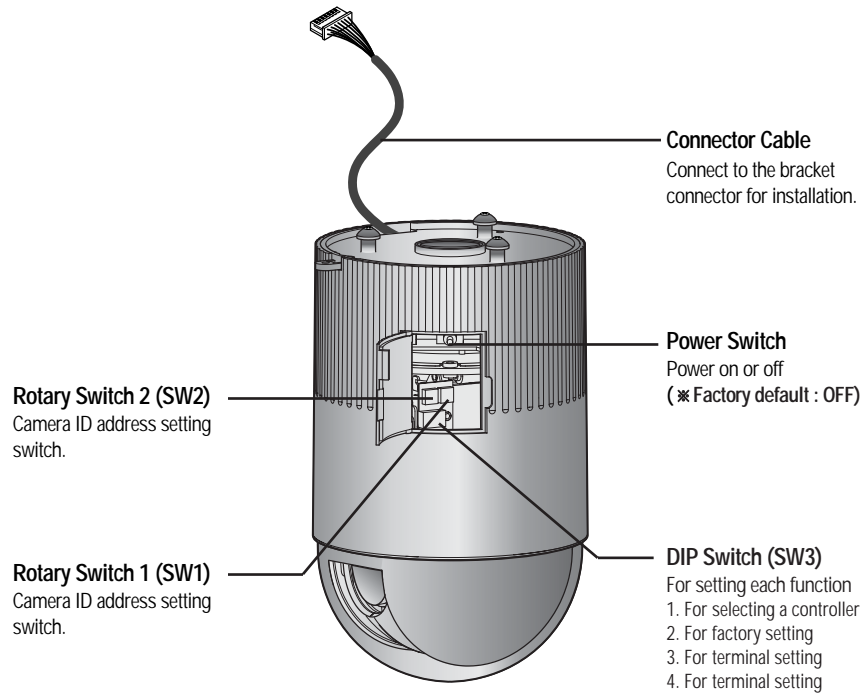
A maximum of 128 preset positions can be set. The preset function enables you to set the location you want to monitor at any time.



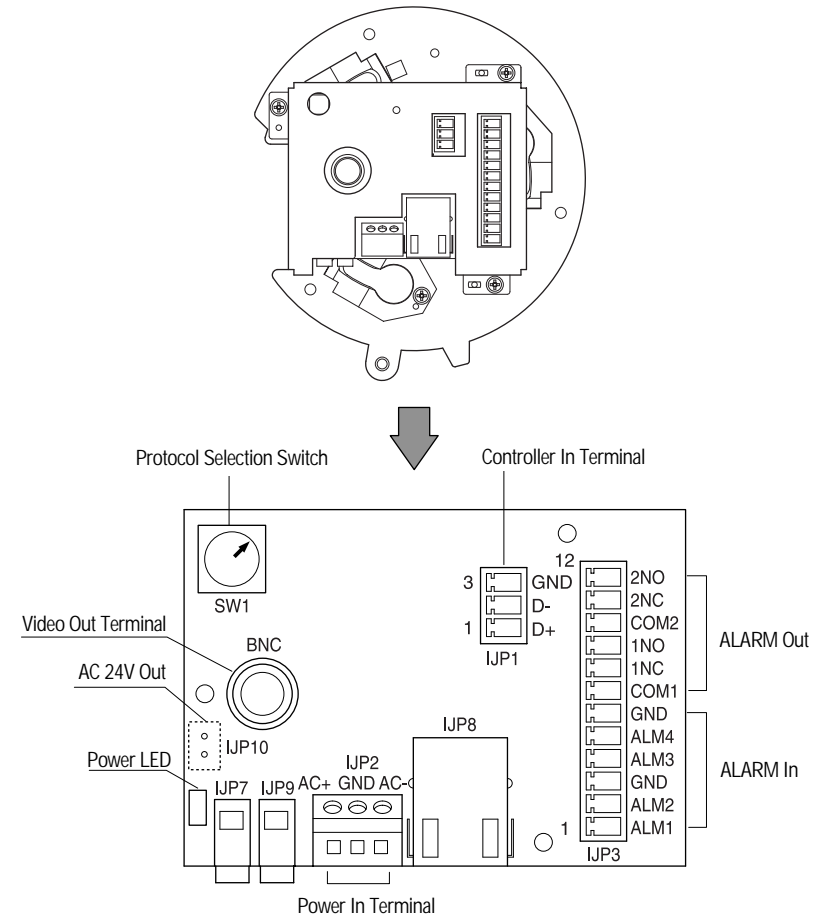
Auto Flip

For monitoring an object moving below a camera, run Auto Flip using a joystick controller, and moving objects can be monitored without reversing, both up and down and left to right.

Front Panel



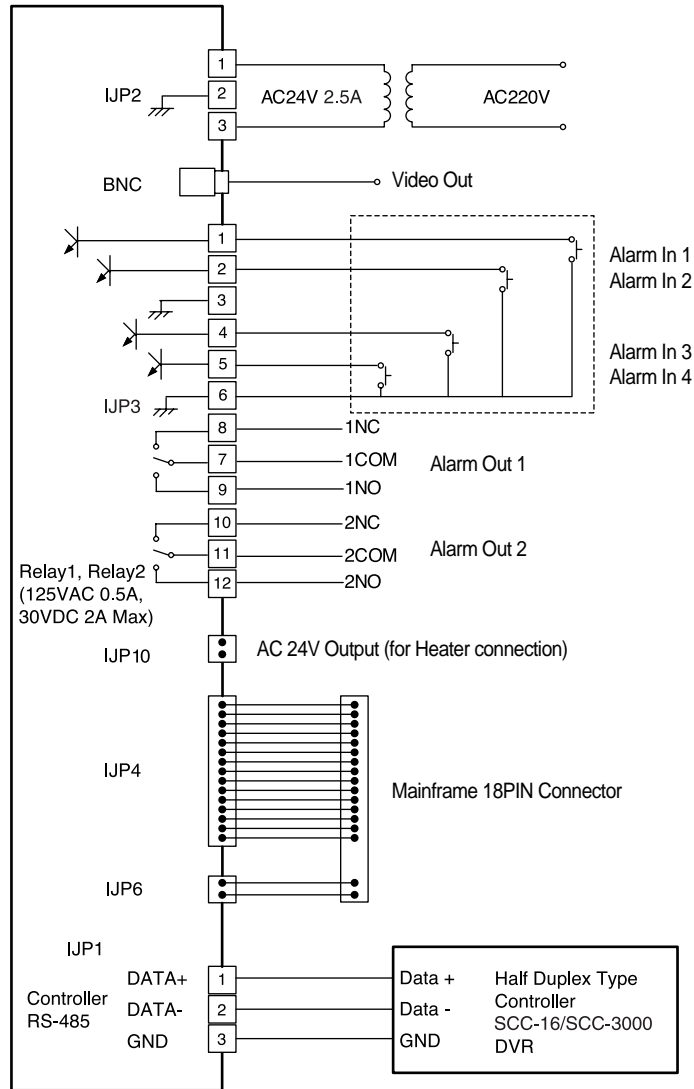
Back Panel



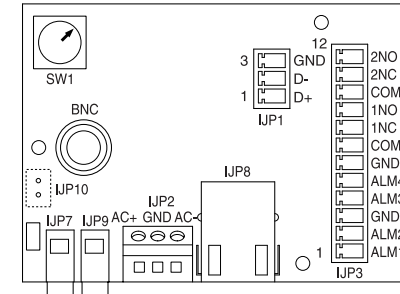
Cautions

- If the Rotary Switch and DIP Switch (SW3) are not displayed, turn the power off and on again. Both switches will then be displayed.
- Do not pull or hold onto the connector cables when moving or delivering the product. It may cause operational failure.
- See the inside of the door for settings for the switches on the main unit of the product.

Bracket Setup for Installation



Initial Setting



● Communication Protocol Setting (Installation Bracket)

Select and set SW1 on the installation bracket for setting the communication protocol.

| SW1 | Protocol | Baud Rate (BPS) |
|-----|----------|-----------------|
| 0 | Samsung | 9,600 |
| 1 | Samsung | 19,200 |
| 2 | Pelco-D | 2,400 |
| 3 | Pelco-D | 4,800 |
| 4 | Pelco-D | 9,600 |
| 5-F | Reserve | |

Note) Factory Default : 0 (Samsung, 9600)

● Baud Rate Setting by DVR Model

For control of the speed dome camera using DVR without a dedicated controller, set the baud rate by DVR model as described below.

| DVR Model | Protocol | Samsung | Pelco |
|--------------|----------|------------|----------------|
| SVR-430 | | 9600,19200 | 9,600 |
| SVR-900/1620 | | 9600,19200 | 4800, 9600 |
| SVR-1630 | | 9600,19200 | 2400,4800,9600 |

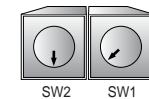
Note) A faster rate may degrade stability.

The control function may not be available depending on the DVR Firmware version.

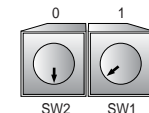
Be sure to install the latest DVR Firmware version.

● Camera ID Setting (Mainframe front panel)

Set the Camera ID using the two rotary switches. SW1 and SW2 refer to the lower and upper positions, respectively.



EX) If the camera ID is number 1, set as described below.



Getting started

● Camera ID Switch Setting

| Camera ID | SW2 | SW1 | Remarks |
|-----------|-----|-----|----------------|
| ID = 0 | 0 | 0 | Not applicable |
| ID = 1 | 0 | 1 | |
| ID = 2 | 0 | 2 | |
| ID = 3 | 0 | 3 | |
| ID = 4 | 0 | 4 | |
| ID = 5 | 0 | 5 | |
| ID = 6 | 0 | 6 | |
| ID = 7 | 0 | 7 | |
| ID = 8 | 0 | 8 | |
| ID = 9 | 0 | 9 | |
| ID = 10 | 0 | A | |
| ID = 11 | 0 | B | |
| ID = 12 | 0 | C | |
| ID = 13 | 0 | D | |
| ID = 14 | 0 | E | |
| ID = 15 | 0 | F | |
| ID = 16 | 1 | 0 | |
| ID = 17 | 1 | 1 | |
| ID = 18 | 1 | 2 | |
| ID = 19 | 1 | 3 | |
| ID = 20 | 1 | 4 | |
| ID = 21 | 1 | 5 | |
| ID = 22 | 1 | 6 | |
| ID = 23 | 1 | 7 | |
| ID = 24 | 1 | 8 | |
| ID = 25 | 1 | 9 | |
| ID = 26 | 1 | A | |
| ID = 27 | 1 | B | |
| ID = 28 | 1 | C | |
| ID = 29 | 1 | D | |
| ID = 30 | 1 | E | |
| ID = 31 | 1 | F | |
| ID = 32 | 2 | 0 | |
| ID = 33 | 2 | 1 | |
| ID = 34 | 2 | 2 | |
| ID = 35 | 2 | 3 | |
| ID = 36 | 2 | 4 | |
| ID = 37 | 2 | 5 | |
| ID = 38 | 2 | 6 | |
| ID = 39 | 2 | 7 | |
| ID = 40 | 2 | 8 | |
| ID = 41 | 2 | 9 | |
| ID = 42 | 2 | A | |
| ID = 43 | 2 | B | |
| ID = 44 | 2 | C | |
| ID = 45 | 2 | D | |
| ID = 46 | 2 | E | |
| ID = 47 | 2 | F | |

| Camera ID | SW2 | SW1 | Remarks |
|-----------|-----|-----|---------|
| ID = 48 | 3 | 0 | |
| ID = 49 | 3 | 1 | |
| ID = 50 | 3 | 2 | |
| ID = 51 | 3 | 3 | |
| ID = 52 | 3 | 4 | |
| ID = 53 | 3 | 5 | |
| ID = 54 | 3 | 6 | |
| ID = 55 | 3 | 7 | |
| ID = 56 | 3 | 8 | |
| ID = 57 | 3 | 9 | |
| ID = 58 | 3 | A | |
| ID = 59 | 3 | B | |
| ID = 60 | 3 | C | |
| ID = 61 | 3 | D | |
| ID = 62 | 3 | E | |
| ID = 63 | 3 | F | |
| ID = 64 | 4 | 0 | |
| ID = 65 | 4 | 1 | |
| ID = 66 | 4 | 2 | |
| ID = 67 | 4 | 3 | |
| ID = 68 | 4 | 4 | |
| ID = 69 | 4 | 5 | |
| ID = 70 | 4 | 6 | |
| ID = 71 | 4 | 7 | |
| ID = 72 | 4 | 8 | |
| ID = 73 | 4 | 9 | |
| ID = 74 | 4 | A | |
| ID = 75 | 4 | B | |
| ID = 76 | 4 | C | |
| ID = 77 | 4 | D | |
| ID = 78 | 4 | E | |
| ID = 79 | 4 | F | |
| ID = 80 | 5 | 0 | |
| ID = 81 | 5 | 1 | |
| ID = 82 | 5 | 2 | |
| ID = 83 | 5 | 3 | |
| ID = 84 | 5 | 4 | |
| ID = 85 | 5 | 5 | |
| ID = 86 | 5 | 6 | |
| ID = 87 | 5 | 7 | |
| ID = 88 | 5 | 8 | |
| ID = 89 | 5 | 9 | |
| ID = 90 | 5 | A | |
| ID = 91 | 5 | B | |
| ID = 92 | 5 | C | |
| ID = 93 | 5 | D | |
| ID = 94 | 5 | E | |
| ID = 95 | 5 | F | |

| Camera ID | SW2 | SW1 | Remarks |
|-----------|-----|-----|---------|
| ID = 96 | 6 | 0 | |
| ID = 97 | 6 | 1 | |
| ID = 98 | 6 | 2 | |
| ID = 99 | 6 | 3 | |
| ID = 100 | 6 | 4 | |
| ID = 101 | 6 | 5 | |
| ID = 102 | 6 | 6 | |
| ID = 103 | 6 | 7 | |
| ID = 104 | 6 | 8 | |
| ID = 105 | 6 | 9 | |
| ID = 106 | 6 | A | |
| ID = 107 | 6 | B | |
| ID = 108 | 6 | C | |
| ID = 109 | 6 | D | |
| ID = 110 | 6 | E | |
| ID = 111 | 6 | F | |
| ID = 112 | 7 | 0 | |
| ID = 113 | 7 | 1 | |
| ID = 114 | 7 | 2 | |
| ID = 115 | 7 | 3 | |
| ID = 116 | 7 | 4 | |
| ID = 117 | 7 | 5 | |
| ID = 118 | 7 | 6 | |
| ID = 119 | 7 | 7 | |
| ID = 120 | 7 | 8 | |
| ID = 121 | 7 | 9 | |
| ID = 122 | 7 | A | |
| ID = 123 | 7 | B | |
| ID = 124 | 7 | C | |
| ID = 125 | 7 | D | |
| ID = 126 | 7 | E | |
| ID = 127 | 7 | F | |
| ID = 128 | 8 | 0 | |
| ID = 129 | 8 | 1 | |
| ID = 130 | 8 | 2 | |
| ID = 131 | 8 | 3 | |
| ID = 132 | 8 | 4 | |
| ID = 133 | 8 | 5 | |
| ID = 134 | 8 | 6 | |
| ID = 135 | 8 | 7 | |
| ID = 136 | 8 | 8 | |
| ID = 137 | 8 | 9 | |
| ID = 138 | 8 | A | |
| ID = 139 | 8 | B | |
| ID = 140 | 8 | C | |
| ID = 141 | 8 | D | |
| ID = 142 | 8 | E | |
| ID = 143 | 8 | F | |

| Camera ID | SW2 | SW1 | Remarks |
|-----------|-----|-----|----------------|
| ID = 144 | 9 | 0 | |
| ID = 145 | 9 | 1 | |
| ID = 146 | 9 | 2 | |
| ID = 147 | 9 | 3 | |
| ID = 148 | 9 | 4 | |
| ID = 149 | 9 | 5 | |
| ID = 150 | 9 | 6 | |
| ID = 151 | 9 | 7 | |
| ID = 152 | 9 | 8 | |
| ID = 153 | 9 | 9 | |
| ID = 154 | 9 | A | |
| ID = 155 | 9 | B | |
| ID = 156 | 9 | C | |
| ID = 157 | 9 | D | |
| ID = 158 | 9 | E | |
| ID = 159 | 9 | F | |
| ID = 160 | A | 0 | Not applicable |
| ID = 161 | A | 1 | |
| ID = 162 | A | 2 | |
| ID = 163 | A | 3 | |
| ID = 164 | A | 4 | |
| ID = 165 | A | 5 | |
| ID = 166 | A | 6 | |
| ID = 167 | A | 7 | |
| ID = 168 | A | 8 | |
| ID = 169 | A | 9 | |
| ID = 170 | A | A | |
| ID = 171 | A | B | |
| ID = 172 | A | C | |
| ID = 173 | A | D | |
| ID = 174 | A | E | |
| ID = 175 | A | F | Not applicable |
| ID = 176 | B | 0 | |
| ID = 177 | B | 1 | |
| ID = 178 | B | 2 | |
| ID = 179 | B | 3 | |
| ID = 180 | B | 4 | |
| ID = 181 | B | 5 | |
| ID = 182 | B | 6 | |
| ID = 183 | B | 7 | |
| ID = 184 | B | 8 | |
| ID = 185 | B | 9 | |
| ID = 186 | B | A | |
| ID = 187 | B | B | |
| ID = 188 | B | C | |
| ID = 189 | B | D | |
| ID = 190 | B | E | |
| ID = 191 | B | F | |

| Camera ID | SW2 | SW1 | Remarks |
|-----------|-----|-----|---------|
| ID = 192 | C | 0 | |
| ID = 193 | C | 1 | |
| ID = 194 | C | 2 | |
| ID = 195 | C | 3 | |
| ID = 196 | C | 4 | |
| ID = 197 | C | 5 | |
| ID = 198 | C | 6 | |
| ID = 199 | C | 7 | |
| ID = 200 | C | 8 | |
| ID = 201 | C | 9 | |
| ID = 202 | C | A | |
| ID = 203 | C | B | |
| ID = 204 | C | C | |
| ID = 205 | C | D | |
| ID = 206 | C | E | |
| ID = 207 | C | F | |
| ID = 208 | D | 0 | |
| ID = 209 | D | 1 | |
| ID = 210 | D | 2 | |
| ID = 211 | D | 3 | |
| ID = 212 | D | 4 | |
| ID = 213 | D | 5 | |
| ID = 214 | D | 6 | |
| ID = 215 | D | 7 | |
| ID = 216 | D | 8 | |
| ID = 217 | D | 9 | |
| ID = 218 | D | A | |
| ID = 219 | D | B | |
| ID = 220 | D | C | |
| ID = 221 | D | D | |
| ID = 222 | D | E | |
| ID = 223 | D | F | |
| ID = 224 | E | 0 | |
| ID = 225 | E | 1 | |
| ID = 226 | E | 2 | |
| ID = 227 | E | 3 | |
| ID = 228 | E | 4 | |
| ID = 229 | E | 5 | |
| ID = 230 | E | 6 | |
| ID = 231 | E | 7 | |
| ID = 232 | E | 8 | |
| ID = 233 | E | 9 | |
| ID = 234 | E | A | |
| ID = 235 | E | B | |
| ID = 236 | E | C | |
| ID = 237 | E | D | |
| ID = 238 | E | E | |
| ID = 239 | E | F | |

| Camera ID | SW2 | SW1 | Remarks |
|-----------|-----|-----|---------|
| ID = 240 | F | 0 | |
| ID = 241 | F | 1 | |
| ID = 242 | F | 2 | |
| ID = 243 | F | 3 | |
| ID = 244 | F | 4 | |
| ID = 245 | F | 5 | |
| ID = 246 | F | 6 | |
| ID = 247 | F | 7 | |
| ID = 248 | F | 8 | |
| ID = 249 | F | 9 | |
| ID = 250 | F | A | |
| ID = 251 | F | B | |
| ID = 252 | F | C | |
| ID = 253 | F | D | |
| ID = 254 | F | E | |
| ID = 255 | F | F | |

Note

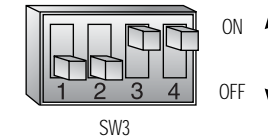
• Factory Default : Camera ID = 1
The rotary switch is on the controller board (controllable from the initial PAN position)

• The three kinds of camera ID below cannot be used.

| Camera ID | R-SW2 | R-SW1 |
|-----------|-------|-------|
| ID = 0 | 0 | 0 |
| ID = 160 | A | 0 |
| ID = 175 | A | F |

● **Controller Model Setting (Mainframe front panel)**

• Set the controller model by switching Dip Switch No. 1



| | Functions | ON | OFF |
|--------|--------------------|------------------------|------------------|
| SW3-#1 | Controller Setting | SVR-430/900 /1620/1630 | SCC-16, SCC-3000 |

Note) Factory Default : OFF
Simultaneous control by a controller and a DVR is not allowed.

● **Factory Default (Mainframe front panel)**

| | Functions | ON | OFF |
|--------|-----------------|-----------------------|-----|
| SW3-#2 | Factory Default | OFF for both switches | |

Note) Factory Default : OFF

● **RS-485 Terminal Setting (Mainframe front panel)**

• Set the terminal by switching Dip Switch No. 3 and 4 On/Off.

| Camera Connection Position | SW3-#3 | SW3-#4 |
|----------------------------|--------|--------|
| Longest Route Terminal | ON | ON |
| On the route | OFF | OFF |

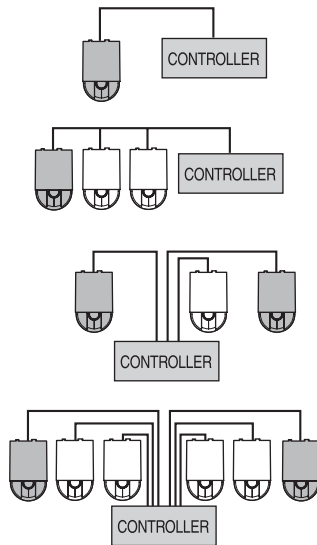
Note) Factory Default: On for both switches

Getting started

It is necessary to connect the terminating resistance to the two units that are furthermost from the relevant camera/controller on the RS-485 Interface in order to prevent signal attenuation.

Since cameras have embedded terminating resistance, select whether to activate or deactivate their terminating resistance by using the DIP Switch. Refer to the connection layout below for deciding which unit is to be connected to the terminating resistance. Set the terminating resistance to the gray colored unit.

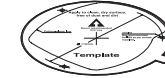
The maximum distance for setting the terminating resistance is 1.2Km.



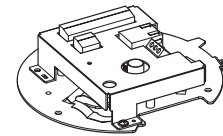
Accessories



User's manual



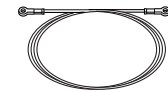
Template



Installation Bracket



3 fixing screws
1 cable lock screw



Safety wire

※ Options

The components below are options

| Component | Model | Description |
|-------------------------|--------------------|---|
| Camera Controller | SCC-16, SCC-3000 | Pan/Tilt/Zoom/Focus Control, OSD Action, a variety of function settings |
| Indoor Housing | STH-160PI | Housing for Indoor Installation |
| Indoor Embedded Housing | STH-128PE | Ceiling Embedded Indoor Housing |
| Outdoor Housing | STH-160PO | Housing (with built-in fan and heater) for outdoor installation |
| Wall mounted | STB-270PW | Wall mounted type |
| Ceiling mounted | STB-496PP | Ceiling mounted type |
| AC Adapter | STA-110 STA-230 | Input : AC 110V Input : AC 230V |

How to Install

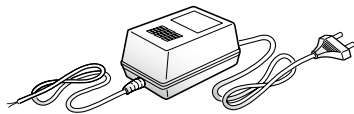
Cable

Preparation

For SPD-2200 installation, the cables listed below have to be prepared.

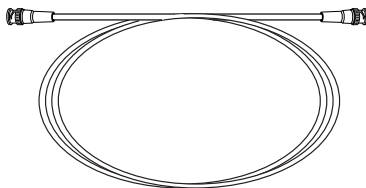
● Power adapter cable

The cable to be connected to the power in the SPD-2200 terminal includes the power adapter, for which the rated voltage is AC24V, 2.5A as described below. (Use UL listed class 2 power source.)



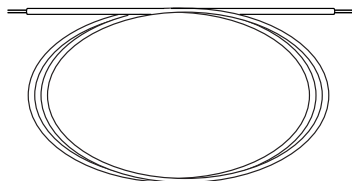
● Video Cable

The cable connecting the SPD-2200 video out terminal and the monitor is the BNC cable as described below.



● RS-485 Communication Cable

The cable connecting the controller for the SPD-2200's RS-485 communication is described below.



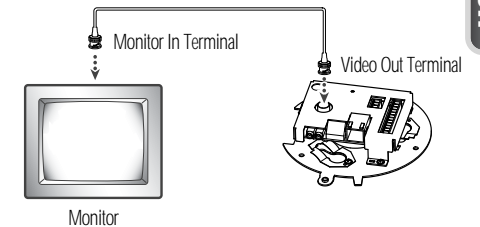
Note

• Adapter, Video and RS-485 communication cables not supplied.

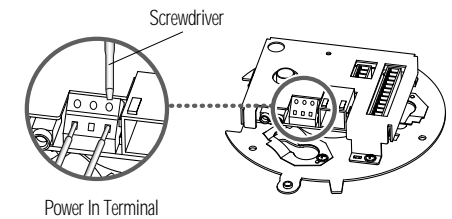
Connection

1. First, connect one end of the BNC cable to the video out terminal.

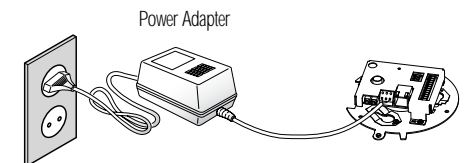
2. Connect the other end of the BNC cable to the video in terminal of the monitor.



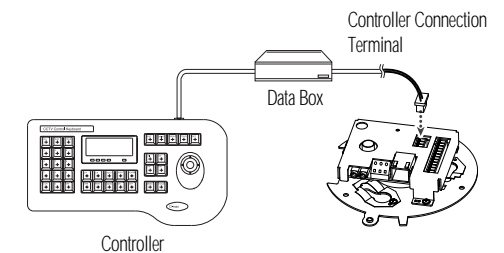
3. Connect one end of the power adapter, comprising two lines, to the Power In Terminal of the bracket using the flathead screwdriver as shown in the figure below.



4. Connect the power adapter plug to the power outlet.



5. Connect the connection terminal of the SPD-2200 controller to the external controller.



How to Install

Accessories (option)

● Cautions

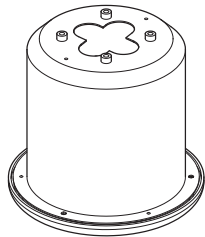
- Confirm that the installation location is strong enough to bear more than 4 times the total weight of the assembly and the speed dome camera (SPD-2200).
- Only install the camera where there is more than 500mm of space above the ceiling board.
- In installing the bracket, use the installation guide template, screws and cables supplied with the camera.
- There is a risk that the camera may be dropped during installation. Prevent any possibility of the camera falling by using the security cable during installation. Unauthorized persons should be prevented from gaining access to the installation site.

● Options related to installation

The options below, when purchased, will facilitate the installation in a variety of different sites.

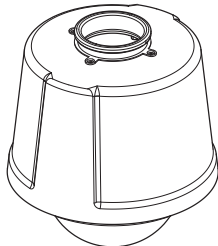
1) Indoor embedded Housing (STH-128PE)

This housing is used when a speed dome camera is embedded in a double ceiling.



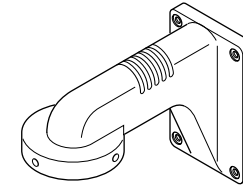
2) Indoor and Outdoor Housing (STH-160PI, STH-160PO)

This housing is used when a speed dome camera is mounted on a wall or ceiling inside or outside.



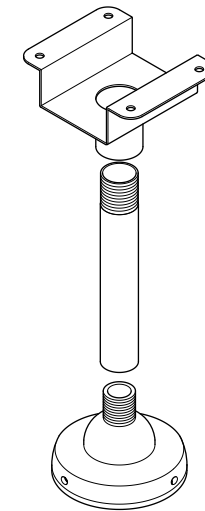
4) Wall Mounting (STB-270PW)

Assembly used when an indoor and outdoor housing for a speed dome camera is to be mounted on a wall.



5) Ceiling Mounting (STB-496PP)

Assembly used when an indoor and outdoor housing for a speed dome camera is to be mounted on a concrete ceiling.



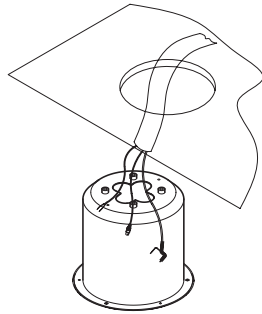
⚠ Cautions

- When installing the speed dome camera in an indoor/outdoor housing, remove the dome cover (front glass) to obtain a clearer image.

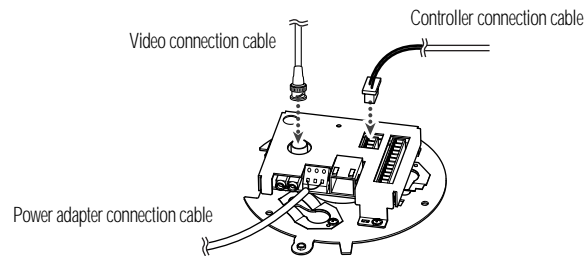
How to Install

How to Install the Camera (using the Embedded Housing)

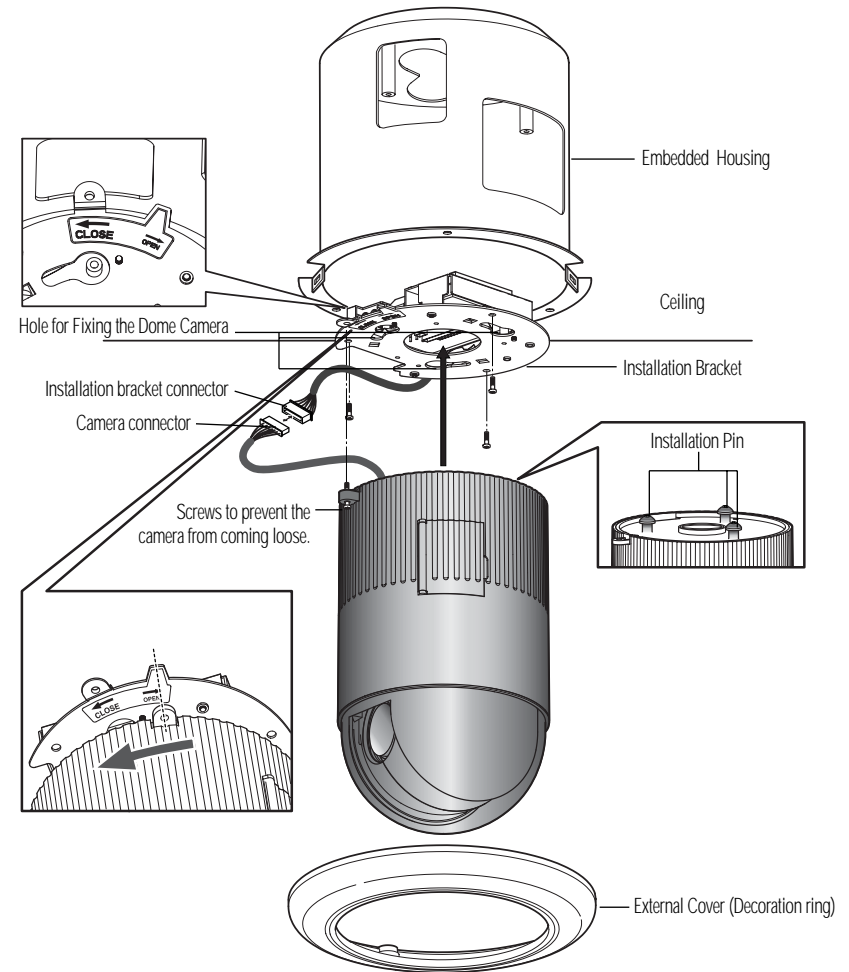
- ① Make a hole of 155mm in diameter in the ceiling to install the camera. Pull the cable down through it.



- ② Connect the video cable, controller cable and power adapter cable to the mounting bracket. (See Page 19)



- ③ Fix the mounting bracket to the Embedded housing using three screws.
- ④ Fasten the eye bolt on the housing and fix the housing to the ceiling, using the cable to prevent it from falling.
- ⑤ Fix the housing to the ceiling using three screws.
- ⑥ Connect the Installation bracket to the connector of the speed dome camera.
- ⑦ Insert the pin at the bottom of the camera into the bracket fixing hole and turn it anticlockwise to secure.
- ⑧ **Fasten the lock screw.**
- ⑨ Place the external cover over the housing and then rotate and fix it.



Cautions

- Check the power adapter input power before connecting the power supply.
- Install the camera using the installation template and cable and fixing screws that are supplied separately for installations without a housing.
- Note that the locking screws should be fastened. If one of the locking screws is not properly fastened, the camera may fall due to vibration or impact once it is installed.

Camera setting

OSD Menu Configuration

This model enables dome camera setting, using the OSD (On Screen Display) menu displayed on the video output, by exclusive control.

The joystick in the OSD menu modes is controlled as described below.

This function is also enabled by sending the exclusive control code from a PC to a dome camera.

| Menu | Functions |
|-----------|------------------|
| TILT Up | Up on the OSD |
| TILT Down | Down on the OSD |
| PAN Left | Left on the OSD |
| PAN Right | Right on the OSD |

● Menu Configuration

| | P1 | P2 | P3 | P4 | Defaults | |
|----------------|---------------|-----------|--------------|--|--|--------------------------|
| Camera Setting | Focus | | Focus Mode | Auto/Manual/One Shot AF | One Shot AF | |
| | | | Digital Zoom | | 4X | |
| | White Balance | AWB Mode | AWB Mode | AUTO/AWC/MANUAL /OUTDOOR/INDOOR Manual : WB RED WB BLUE | 000 000 | |
| | | | | AE Mode | AUTO/AGC OFF/ALL/AGC/IRIS/SHUTTER - Shutter SPD - Iris Adjust - AGC Adust | Auto 1/60 170 - |
| | | | | D&N Mode | Auto/Day/Night | Auto |
| | Back Light | Mode | | Slow Shutter | 0(OFF), 1-9 (2Fields~128Fields) | OFF |
| | | | | Area | Center/Upper/Lower/Left/Right | Center |
| | Sync | Line Lock | | Weight | Low/High | Low |
| | | | | Internal | | Internal |
| | Brightness | ON/OFF | | Line Lock | Line Lock Phase | 225 |
| | | | | Sharpness | | 10 |
| | Others | ON/OFF | | Mirror | ON/OFF | OFF |
| | | | | Nega/Posi | Negative/Positive | Positive |

| | | | | |
|------------------|------------------|------------------------------|----------------------------|--------|
| Sequence Setting | Set Preset | Setting/Execute/Clear/Status | | |
| | Pan Swing | Setting/Execute/Clear | | |
| | Tilt Swing | Setting/Execute/Clear | | |
| | Swing Focus Mode | Auto/Manual | | MANUAL |
| | Group SEQ | Group1~Group6 | Setting/Execute/Clear | |
| | Tour SEQ | Setting/Execute/Clear | | |
| | PTZ Trace | Replay/Memorize | | |
| Power On Resume | ON/OFF | | OFF | |
| P/T Setting | Pan Limit | Position/ON/OFF | | |
| | Tilt Limit | Position/ON/OFF | | |
| | Area Setting | Area 1~ Area 8 | Name/Position/Clear/On/Off | |
| | Area Masking | Mask1~Mask8 | Position ON/OFF | |
| | Home Position | Setting ON/OFF | | |
| | Smart P/T | ON/OFF | | ON |
| OSD Setting | Auto Filp | ON/OFF | | ON |
| | Camera ID | ON/OFF | | ON |
| | Camera Name | Edit, ON/OFF | | |
| | Preset Number | ON/OFF | | ON |
| | Preset Name | Edit, ON/OFF | | |
| | Sequence Status | ON/OFF | | ON |
| | Area Name | ON/OFF | | OFF |
| Alarm Setting | Alarm Enable | ON/OFF | | OFF |
| | Alarm Input | Alarm1~Alarm4 | NC/NO/OFF | |
| | | | 1~4(Priority) | |
| | | | Preset/Group/Tour | |
| | Alarm Out | Out1 SET~Out2 SET | 1~4 | |
| | | | MD | |
| | | Out1 Time~Out2 Time | 1~60(Sec) | |
| | | | 1~60(Min) | |
| | Motion Detection | MD Execute | 1~60(Hour) | |
| | | | Out1 Off~Out2 Off | |
| Detect Area | | | Whole/Upper/Lower/Center | Whole |
| Initialize | Sensitivity | Preset No. | | |
| | | Power On Reset | Cancel / Execute | |
| | | Factory Default Set | Cancel / Execute | |
| | | Camera Default Set | Cancel / Execute | |
| Status | Auto Refresh | OFF, 1-7 Days | | 7 Days |



Note

• Preset setting is available both from the controller and the OSD menu.

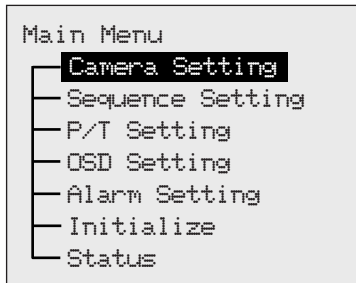
● Dome Camera Users' Menu Settings

How to Use the OSD Menu

Check whether the camera is set to manual mode and press the OSD Menu Key, or 1 and the MENU Key at the same time.

The screen will then display the contents as shown below.

Main Menu



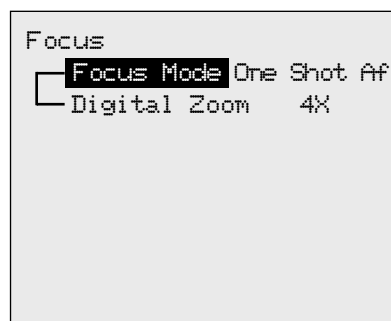
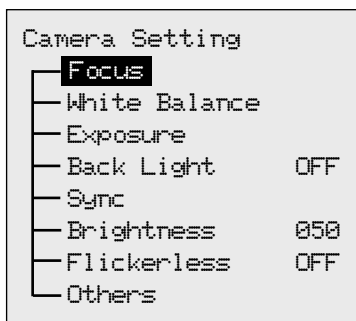
Move the cursor downwards to the submenu to set. Press the Enter key on the selected submenu. You can then change and set the submenu. Press the ESC KEY, and the OSD menu closes.

For more details, please see the Controller User Manual.

1) Camera Setting

Select Camera Setting in the Main Menu Window, and the Camera Setting Menu appears.

Camera Setting Menu



FOCUS

The Focus menu sets the focus mode to either Auto or Manual Mode.

① Focus Mode

- Auto : Automatically focuses by continuous monitoring in Auto Mode. Since the focus is automatically adjusted when the Zoom key is controlled, Focus key input is not applied.
- Manual : The Manual mode enables the user to manually adjust the focus.
- One Shot AF : One Shot AF activates auto-focusing when the camera stops moving. When the camera stops, it works as in Manual Mode.

② Digital Zoom

Changes the digital Zoom factors.

※ We recommend setting the digital zoom factor before presetting.

Cautions

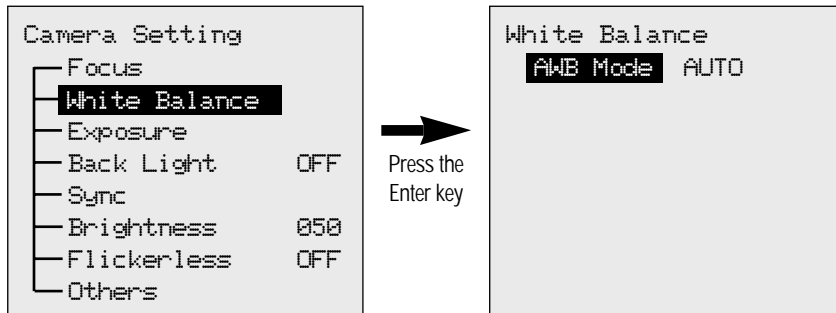
Digital Zoom

- The higher the digital zoom factor, the lower the image quality.

Auto-focus

- The Auto-Focus may not work properly under the conditions below.
 - If the illumination in a monitoring zone is low
 - If the Slow-Shutter is activated
 - If the amplification degree is increased
 - If the illumination in a monitoring zone is excessively high
 - If both remote objects and close objects are included in a monitoring zone
 - If there is no contrast (black and white), such as the sky or a wall, within the picture
 - If there is a thin horizontal line within an image

Camera setting



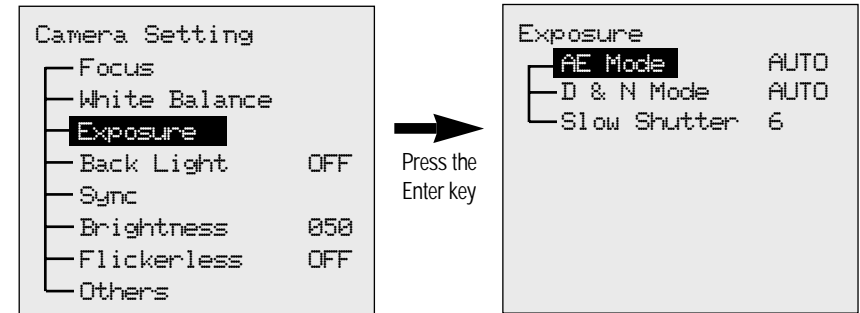
White Balance

The White Balance menu activates the white balance function, which adjusts the correct white color for lighting with any color temperature.

Select from Auto/AWC/Indoor/Outdoor/Manual

① AWB Mode

- Auto : Automatically adjusts the colors according to changes in the light source.
- AWC : Sets the lighting condition for an object and forcibly adjusts its color to white. Images can only be captured under this preset condition
- Manual : Sets the color temperature with the appropriate ratio of RED to BLUE.
 - WB Manual
Users can adjust the colors by adding or reducing the percentage of Red or Blue.
 - WB Red
The Red Gain can be changed.
 - WB Blue
The Blue Gain can be changed.
- Outdoor : Sets the color temperature to 5,600K.
- Indoor : Sets the color temperature to 3,200K.



Exposure

Controls the camera exposure

① AE Mode

- Auto: Automatically adjusts the video signal brightness according to the light intensity.
- AGC OFF : Sets AGC Gain as OFF.
- All: Manually sets the electronic Shutter, Iris and AGC.
- AGC: Manually sets AGC.
 - AGC Adjust : The AGC (Automatic Gain Control) menu sets whether or not to control the gain automatically when an object is viewed in poor lighting, such that the image brightness is below a certain level. Select the AGC Adjust menu, and you can increase or decrease the level value.
- IRIS: Manually sets the Iris.
 - Iris Adjust : Sets the video signal brightness on the screen by adjusting the Iris level.
- Shutter: Manually sets the electronic Shutter rate.
 - Shutter SPD : The Shutter SPD supports 8 shutter speed rates from 1/60 sec. to 1/10,000 sec.

[Table-1 Step-by-Step Setting]

| High-Speed Shutter | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|------|-------|-------|-------|---------|---------|---------|----------|
| (Sec) | 1/60 | 1/125 | 1/250 | 1/500 | 1/1,000 | 1/2,000 | 1/4,000 | 1/10,000 |

② D&N Mode (Day & Night Mode)

Automatically detects the degree of darkness at night, or in poor lighting conditions, and so keeps the screen bright and clear.

- Auto : When the Auto Mode is selected, it automatically switches to Color mode to maintain optimum color during the day, and to Black and White mode at night for clearer pictures in poor lighting. However, the Slow Shutter doesn't work in Auto Mode.
- Day : Maintains color images. The Slow Shutter function is activated in this mode.
- Night : Maintains black and white images. The Slow Shutter function is deactivated in this mode.

③ Slow Shutter

The Slow Shutter is activated only in Day Mode and keeps the screen bright and clear in low lighting conditions.

Increase the level in the menu, and the maximum level can be adjusted. (X2-X128) The larger the scale, the brighter the screen. However, the after-image of moving objects is also increased.

[Table-2 Step-by-Step Setting]

| Low-Speed Shutter | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------------|-------------|----|----|----|-----|-----|-----|-----|-----|------|
| (Fields) | Shutter OFF | X2 | X4 | X8 | X12 | X16 | X24 | X32 | X64 | X128 |

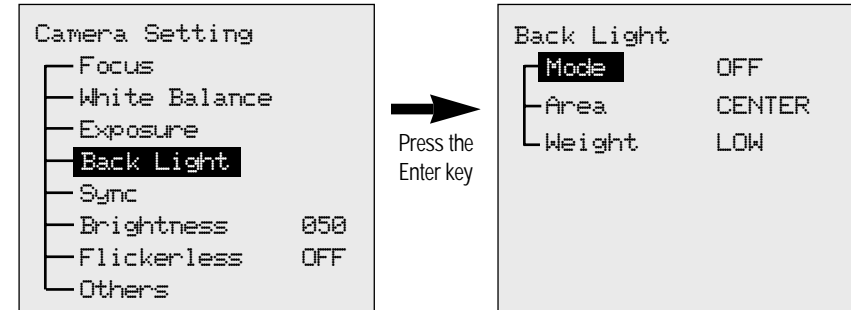
Note

The relationship between AE Mode and D&N Mode is described below.

| D&N \ AE | Shutter | Iris | AGC |
|-----------|------------|---|---|
| Day(OFF) | Adjustable | Adjustable | Adjustable |
| Auto | Auto Mode | Keep the Day status value (No change allowed) | Keep the Day status value (No change allowed) |
| Night(ON) | Auto Mode | Keep the Day status value (No change allowed) | Keep the Day status value (No change allowed) |

The relationship between AE Mode and D&N Mode is described below.

| D&N \ AE | AUTO | Manual |
|----------|-----------------------------------|---------------------------------------|
| Day(OFF) | Slow Shutter Mode available | Slow Shutter Mode not available |
| Auto | Automatic D&N switching available | Automatic D&N switching not available |



Back Light Ctrl

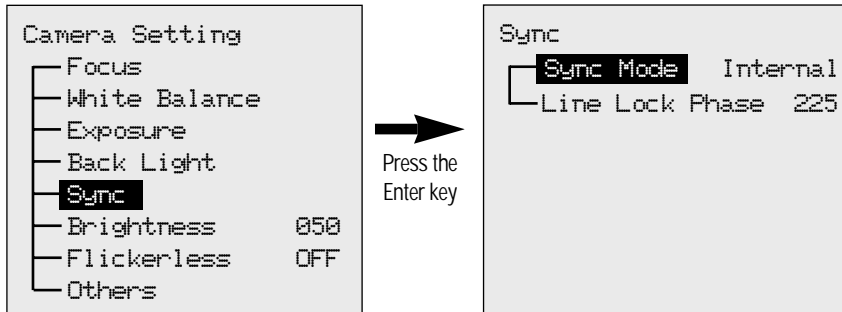
- BLC Mode
Use when the difference between light levels at the center of the screen and the edge of the screen is great – for example when there is backlight.
ON activates the Backlight function and OFF deactivates it. The default is OFF.
- Area Mode
Set the area for backlight compensation. The default is Center.
 - Center : compensates for backlight in the center area of the screen.
 - Upper : compensates for backlight in the upper area of the screen.
 - Lower : compensates for backlight in the lower area of the screen.
 - Left : compensates for backlight in the left area of the screen.
 - Right : compensates for backlight in the right area of the screen.



- Weight
Set the level of backlight compensation. The default is High.
 - Low : slightly improves the backlight compensation.
 - High : substantially improves the backlight compensation.

Note

- The Area and Weight set by BLC Mode are only effective only when a camera is not moving. When the camera is rotating, as with Preset/Group/Tour/Trace, the camera works with the Area on Center and the Weight on High.



Sync

Selects Internal synchronization/Line Lock. The default is Internal synchronization.

- Internal : Internal sync method
- Line Lock : The internal sync method is the power-frequency synchronization method. The power phases of several units can be adjusted.
- Line Lock Phase : With the Line Lock, the phase can be adjusted from 0° to 360°. The default is 225°.

※ For Internal, the Line Lock Phase cannot be adjusted.

Brightness

Sets video signal brightness on the screen.

Flickerless

Flickerless Mode

Sets the Flickerless Mode ON or OFF. Fluorescent tube flicker is eliminated.



Note

- D/N Mode is not activated when the Flickerless mode is ON.

Others

① Sharpness

Highlights image contour by increasing the Aperture Gain of the camera.

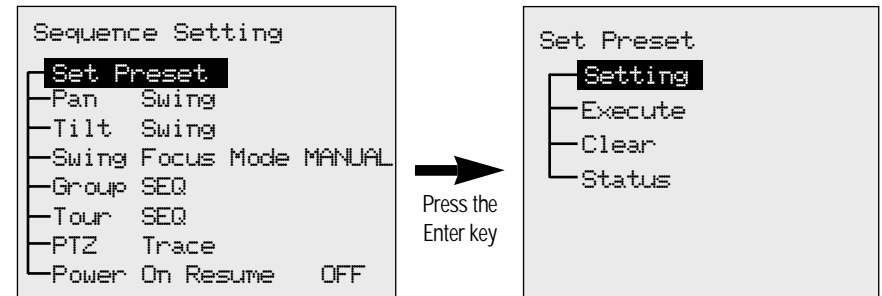
② Mirror

Reverses the video output signal from left to right and vice versa

③ Nega/Posi

The video output signal is changed to positive or negative.

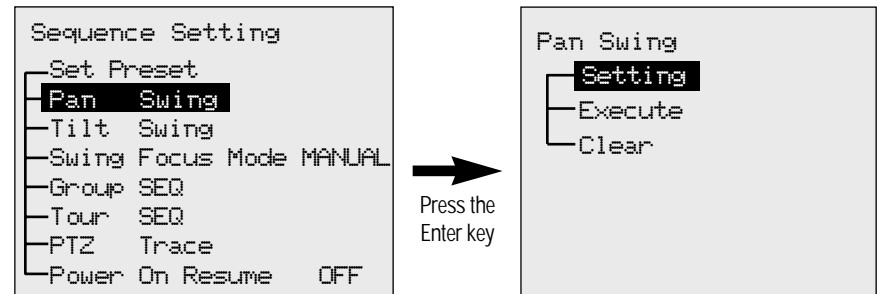
2) Sequence Setting



① Set Preset

When users set their own chosen PAN/TILT positions or ZOOM and FOCUS, they can call frequently and monitor the status. Up to 128 positions can be preset. (1-128)

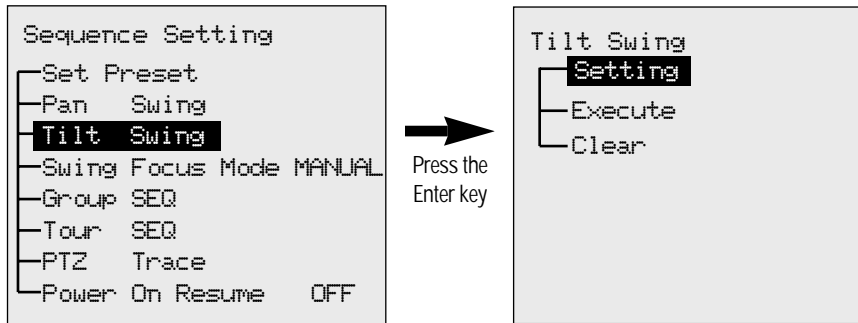
- Setting : Select the preset No. to set, adjust the PAN/TILT/ZOOM and press Enter.
- Execute : Select the preset No. to run, and the relevant camera starts running.
- Clear : Select the preset No. to clear, and the relevant setting is deleted.
- Status : Displays the current preset No.



② Pan Swing

Activates and sets Swing monitoring in the Pan direction and deletes data

- Setting : Selects the preset swing position with the joystick and sets the position with the Enter key.
SPD is the speed the camera moves.(001-240°/sec)
DWL is the dwell time for the camera.(1-128sec)
Completes the setting by pressing the Enter key on the selected position.
- Execute : Starts swing monitoring.
Stops it with the Stop key.
- Clear : Deletes the swing data



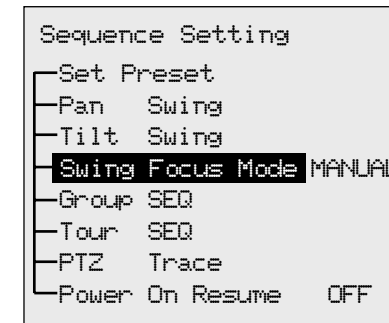
③ Tilt Swing

Activates and sets Swing monitoring in the Tilt direction and deletes data

- Setting
 - SSelects the preset swing position with the joystick and sets the position with the Enter key.
 - SPD is the speed with which the camera moves.(001-240°/sec)
 - DWL is the dwell time for the camera.(1-128sec)
 - Completes the setting by pressing the Enter key on the selected position.
- Execute
 - Starts swing monitoring.
 - Stops it with the Stop key.
- Clear
 - Deletes the swing data.

Notes

- For 0° Tilt in Wide mode, about a third of the object does not appear on the screen.
- Some objects may appear whiter than the actual colors as a result of the AGC effect.

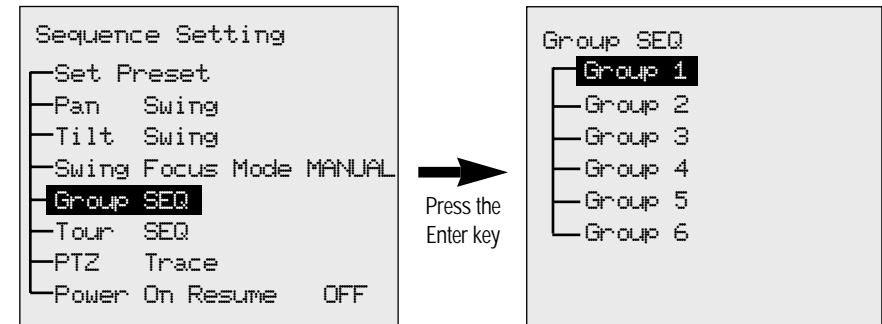


④ Swing Focus Mode

This mode is for activating the Auto Focus during continuous operation of Pan or Tilt Swing.

Note) Excessively fast Pan or Tilt Swing may disrupt the Auto Focus.

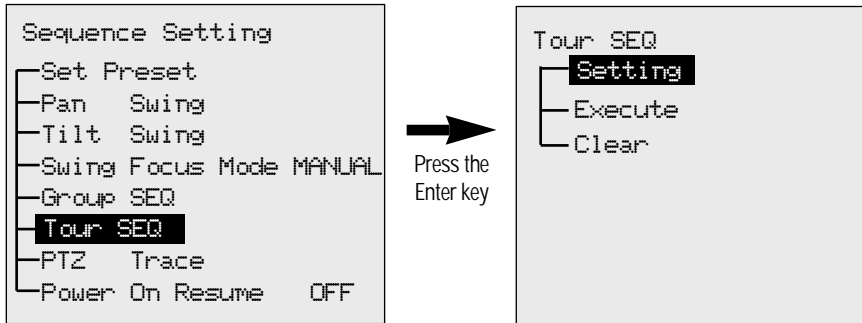
- AUTO/MANUAL
 - AUTO activates the Auto Focus.



⑤ Group SEQ

Starts and sets Sequence monitoring and deletes the data. Registers up to 6 groups.

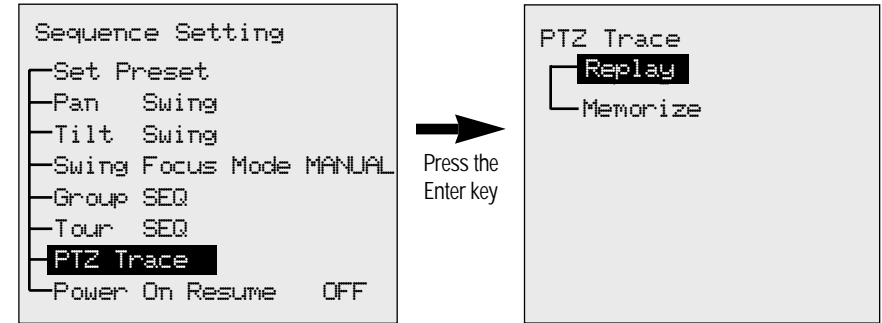
- Setting
 - Select the Preset Position to monitor using the joystick, and set the position using the Enter Key.
 - SPD is the speed with which the camera moves. (001-240°/sec)
 - DWL is the dwell time for the camera. (1-128sec)
 - Completes the setting by pressing the Enter key on the selected position.
- Execute
 - Starts Group monitoring.
 - Stops it with the Stop key.
- Clear
 - Deletes the group data.



⑥ Tour

Starts and sets Group monitoring and deletes the data.

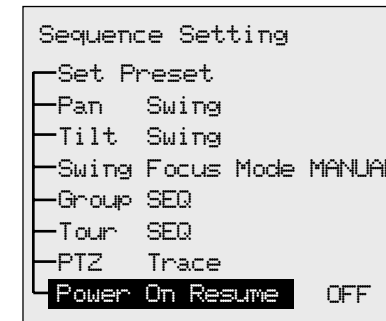
- Setting
Selects the procedure for the registered Group Sequence with the joystick and sets it with the Enter key.
If an unregistered number is designated, the number cannot be entered.
Completes the setting by pressing the Enter key on the selected position.
SPD is the speed the camera moves. (001~240°/sec)
DWL is the dwell time for the camera.(1~128 sec)
- Execute
Starts Group monitoring.
- Clear
Deletes the Group monitoring data.



⑦ PTZ Trace

Memorizes and plays the manual control routes (Pan, Tilt, Zoom and Focus)

- Replay
Repeatedly plays the manual control routes
Stops it with the Stop key.
※ If the control range is restricted to ① Pan Limit and ② Tilt Limit, the operation is not allowed beyond the controlled range. Exercise caution.
- Memorize
While the manual setting is memorized in the internal memory for at least 120 seconds after this function is activated, the memory time varies depending on the PTZ operation.
OVER means that the Memorize function is ended.
※ When the control range is restricted to ① Pan Limit and ② Tilt Limit, it is memorized.

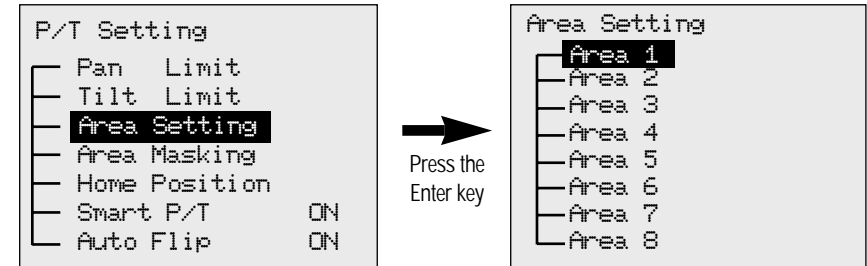
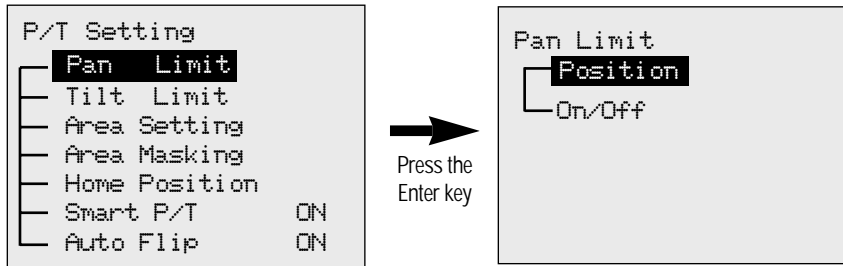


⑧ Power On Resume

When the power supply is resumed after suspension due to power failure, the Sequence operation set before the power failure is maintained.

3) P/T Setting

P/T Setting Menu



① Pan Limit

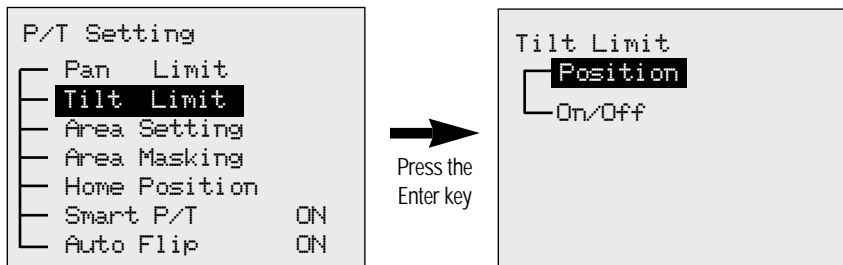
Limits the range of movement in the PAN direction

- Position

Sets the range of movement. Determines the position measured from the left using the joystick and the Enter key. The end position can be changed to the initial operation when power is resumed, depending on the setting position. This represents normal operation.

- ON/OFF

Limit starts working when ON is selected.



② Tilt Limit

Limits the range of movement in the Tilt direction.

- Position

Sets the range of movement. Determines the position measured from above using the joystick and the Enter key. The end position can be changed to the initial operation when power is resumed depending on the setting position. It is the normal operation.

- ON/OFF

Limit starts working when ON is selected.

③ Area setting

Indicates the zone. Sets up to 8 areas.

- Area Name

Sets the area names. Up to 12 characters (English, Chinese, Numbers, etc.) can be entered using the joystick and the Enter key. After input, put the area marks to SET using the joystick and press the Enter key. The setting is then completed.

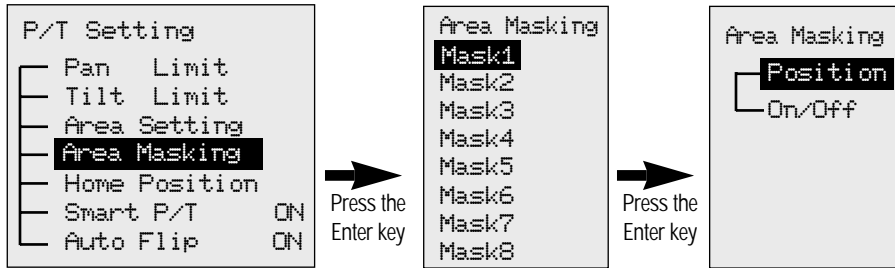
- Position

Sets the range of an area. Determines the position measured from the left using the joystick and the Enter key. When the range of an area is overlapped, the area with the lower number indicates the overlapped area.

- ON/OFF

Sets the area display On or Off. This setting is valid from when a camera moves from the current area to another area.

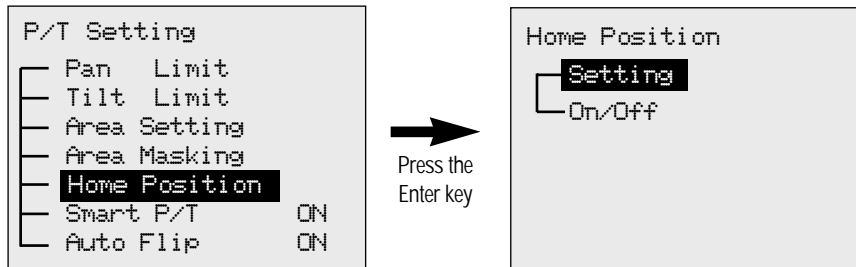
Set the OSD Setting ON. When the OSD Setting is OFF, this function doesn't work. The default is OFF.



④ Area Masking

The area to be excluded from the monitoring operation is displayed in white. Up to 8 areas can be set to be in white.

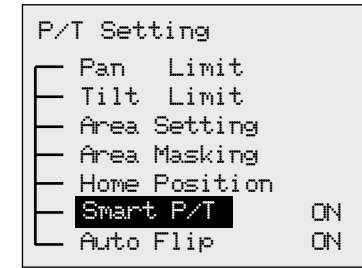
- Position
Select the scope of the display using the joystick and Enter Key.
- ON/OFF
Sets the area display function On or Off.



⑤ Home position

If any motion is detected within a certain period, the camera moves to the preset position.

- Setting
Sets the preset position number to which a camera moves, and when it moves.
Preset Position : 01 ~ 128
Time: 00-60 Min. (00 means 30 seconds)
- ON/OFF
Sets the activation of this function.



⑥ Smart P/T

Changes the speed of PAN and TILT according to the zoom factor. In Tele, Pan/Tilt becomes slow. In Wide, Pan/Tilt becomes fast. One rotation in Tele and Wide takes about 15 seconds and 3 seconds respectively.



⑦ Auto Flip

When Tilt is set to the 90° Limit using the joystick, and the setting is kept for a certain period, the Auto Flip function makes PAN automatically rotate 180° and enables the Tilt area to be seen on the opposite side of the screen.

With this function, the Tilt range is extended to 180°. For monitoring a moving object under a camera, activate Auto Flip using the controller joystick, and you can monitor the object without the screen turning upside down or reversing left to right.

Camera setting

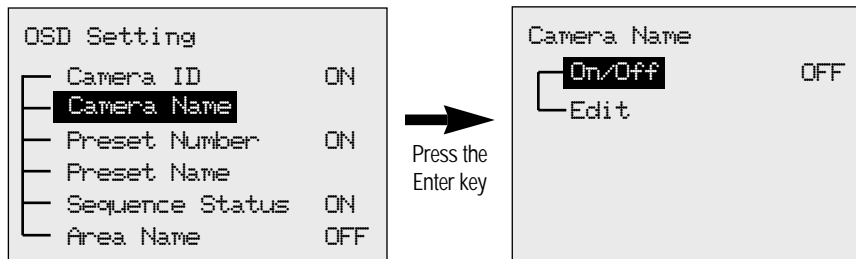
4) OSD Setting

OSD Setting Menu

| OSD Setting | |
|-----------------|-----|
| Camera ID | ON |
| Camera Name | |
| Preset Number | ON |
| Preset Name | |
| Sequence Status | ON |
| Area Name | OFF |

① Camera ID

Sets the camera ID display.



For editing, move the cursor to Edit and press the Enter key.

```

0123456789
ABCDEFGHIJKLMNPOQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
! ? < > << >> [ ] * * ÷ + - = _ || / o □
~ ↑ ↓ ← → ' " , . …… ; : ¥ $ © £ % # &
Chinese1 Back Space CLR SET
    
```

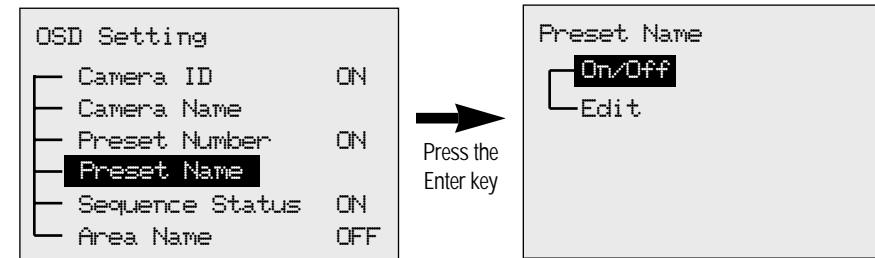
② Camera Name

- Edit
Sets the camera names using up to 12 characters in English (or Chinese), numbers and special characters.
- On/Off
Set whether to display a camera name.

| OSD Setting | |
|-----------------|-----|
| Camera ID | ON |
| Camera Name | |
| Preset Number | ON |
| Preset Name | |
| Sequence Status | ON |
| Area Name | OFF |

③ Preset Number

Sets the preset numbers.



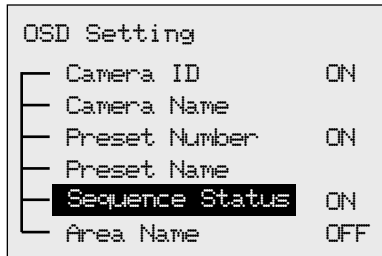
For editing, move the cursor to Edit and press the Enter key.

```

0123456789
ABCDEFGHIJKLMNPOQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
! ? < > << >> [ ] * * ÷ + - = _ || / o □
~ ↑ ↓ ← → ' " , . …… ; : ¥ $ © £ % # &
Chinese1 Back Space CLR SET
    
```

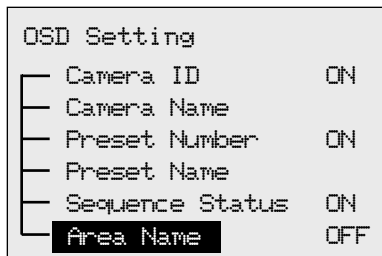
④ Preset Name

- Edit
Sets the preset names using up to 12 characters in English (or Chinese), numbers and special characters.
- On/Off
Set whether to display a preset name.



⑤ Sequence Status

Sets the sequence groups



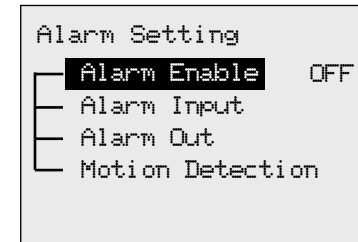
⑥ Area Name

Sets the area names

* With the area name off, the area can't be displayed.

5) Alarm Setting

Alarm Setting Menu

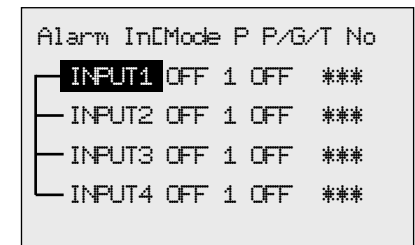
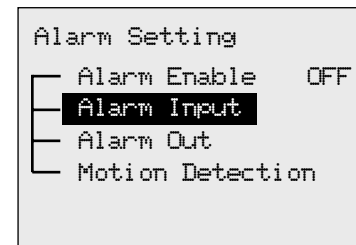


① Alarm Enable

To determine whether to activate the alarm, set to Alarm Enable.

• ON/OFF

The alarm is activated with ON.



② Alarm Input

Sets the Alarm Input Mode, Priority and Alarm Activation Method

• NC/NO/OFF

Selects NC, NO or OFF depending on the alarm sensor types.

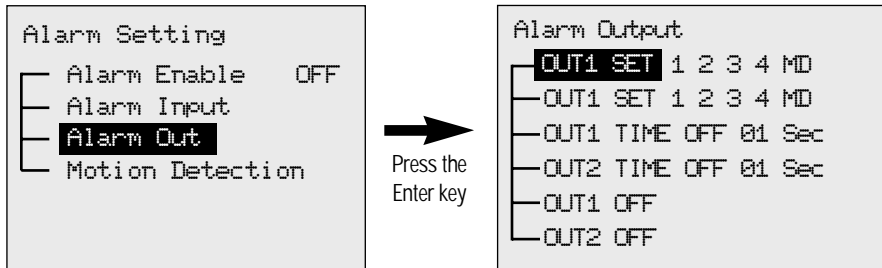
• 1-4 (Priority)

Sets the priority of four alarm inputs and reacts to the alarm input in accordance with the priority.

• Preset/Group/Tour Number

Sets the Preset, Group or Tour for reaction to the alarm input.

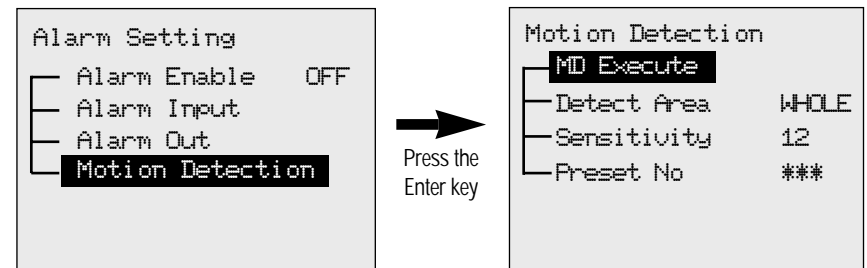
In case of alarm, moves to the Preset/Group/Tour/Off corresponding to each alarm. If there are several alarms in sequence, stays in the Preset/Group/ Tour position during the Dwell Time according to the input sequence. The pattern- linked alarm then carries out the relevant pattern motion in sequence.



③ Alarm Out

Matches each alarm input to one of two Alarm Outs

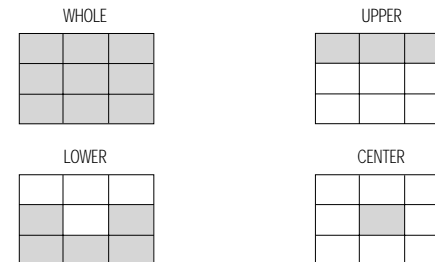
- OUT1 SET/OUT2 SET
Matches two alarm outputs to one of four alarm inputs and MD.
- OUT1 TIME/OUT2 TIME
Sets the ON/OFF and operating time in units of seconds, minutes or hours. (1-59 sec., 1-59 min., 1-59 hours)
- OUT1 OFF/OUT2 OFF
When each alarm output is activated, select this function to forcibly release the alarm outputs. The alarm output is then deactivated.



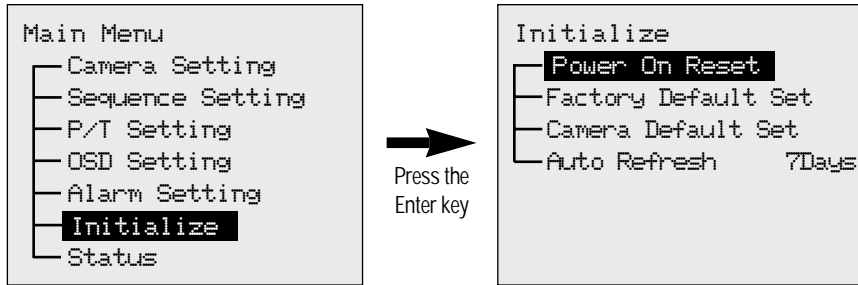
④ Motion Detection

Motion Detection sets the motion detection function, areas to detect motion, and sensitivity of motion detection. With Motion Detection on, the movements of an intruder can be detected. When motion is detected, an alarm signal is sent to the Alarm Out.

- MD Execute
With Motion Detection On, moves to the preset position and then to On.
- Detect Area
Sets the area to detect.
 - Whole : Detects motion on the whole screen.
 - Upper : Detects motion on the upper side of the screen
 - Lower : Detects motion on the lower side of the screen
 - Center : Detects motion on the center of the screen



- Sensitivity
Sets the detection sensitivity. The higher the number, the smaller the motion the sensor reacts to.
- Preset No
Sets the preset number to which to move a camera when motion is detected.



6) Initialize Setting

① Power On Reset

- Initialize a camera to the status prior to power supply

② Factory Default Set

- Initialize to the factory default. Data such as preset is deleted. This function is used to initialize a variety of settings. However, the digital zoom factor is not changed.

③ Camera Default Set

- When a single camera module is replaced due to a defect only in that camera, Camera Default Set is used to set the replacement camera module to the setting of the previous camera.

④ Auto Refresh

- Optimize the built-in electrical circuit and the status of fixtures and devices in a camera at a pre-determined interval (operating intervals can be set).

This is used for keeping, maintaining and correcting the camera settings when a camera directly faces a specific light source, or the setting is not preserved because the camera has been rotating left, right, up and down in a specific area for a long time.

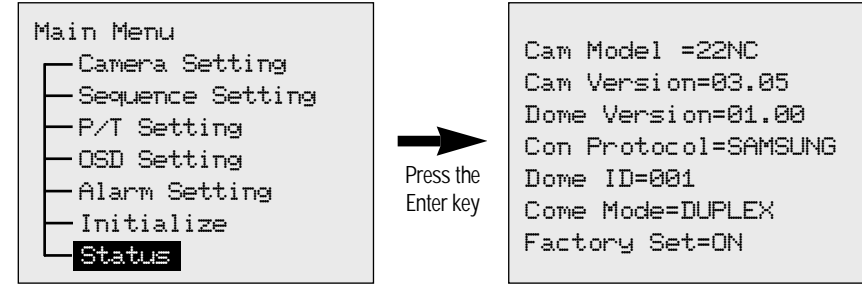
The default is 7 Days.

- OFF, 1~7Days

Auto Refresh won't run when OFF is selected. Select between 1-7 Days, and Auto Refresh will run at the selected intervals.

Auto Refresh takes less than about 10 seconds.

The message "Auto Refresh" disappears when the operation is completed.

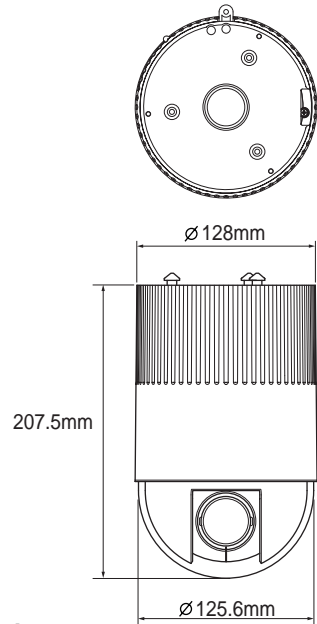


7) Status

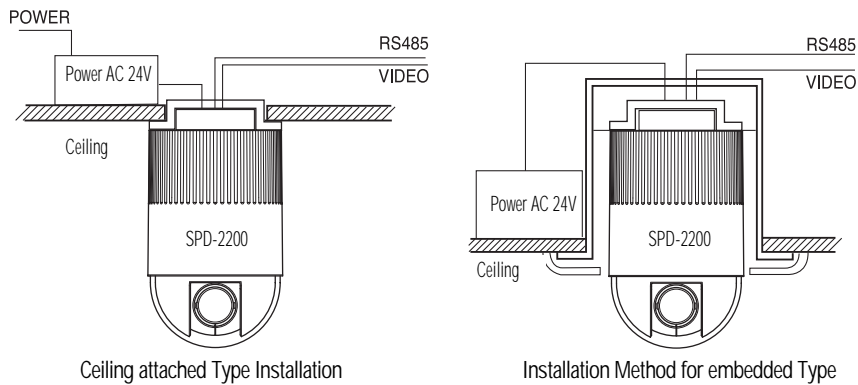
Displays the dome camera setting.

| | |
|-----------------------|-----------------------------------|
| Cam Model =22NC | Mounted Camera Model |
| Cam Version=03.05 | Mounted Camera S/W Version |
| Dome Version=01.00 | Control Board S/W Version |
| Con Protocol=SAMSUNG | Setting Protocol |
| Dome ID=001 | Dome Camera ID |
| Controller=Type1-9600 | Communication Mode Setting Status |

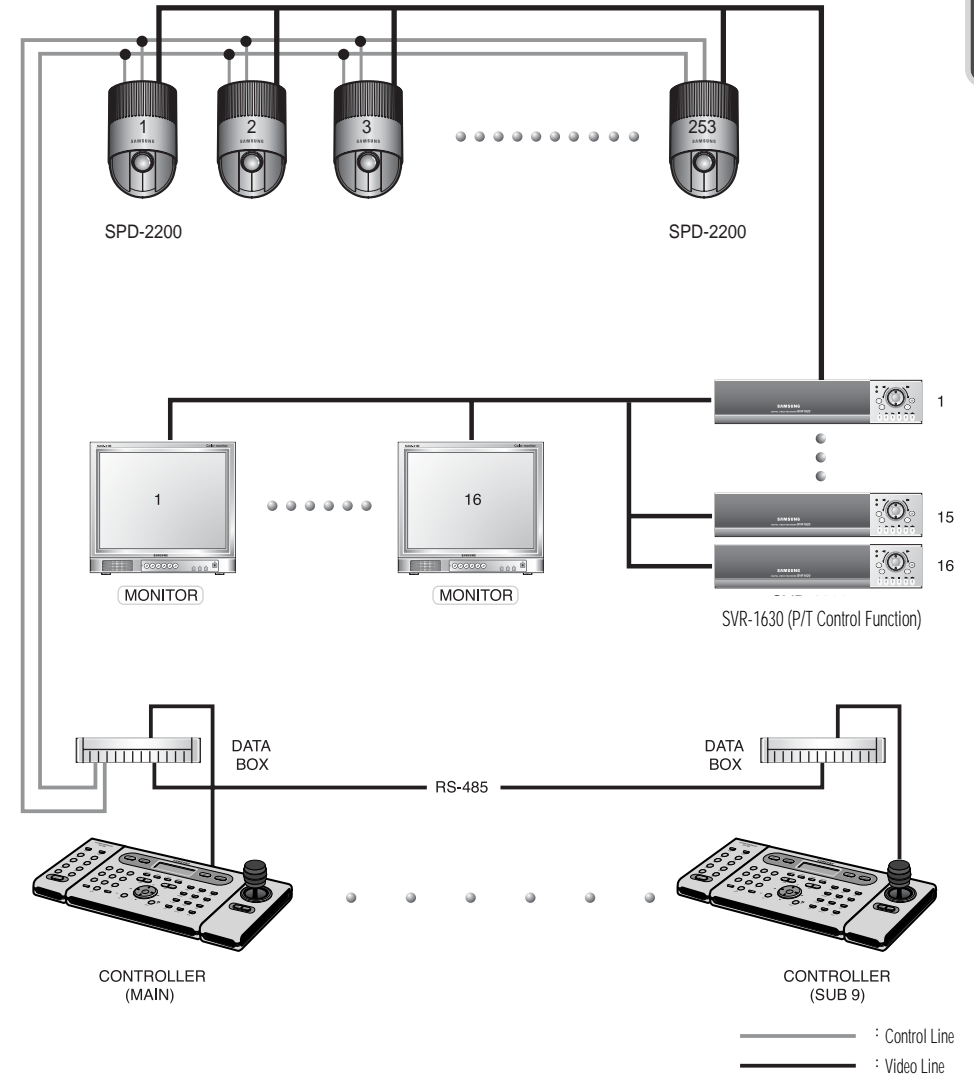
● Dimension



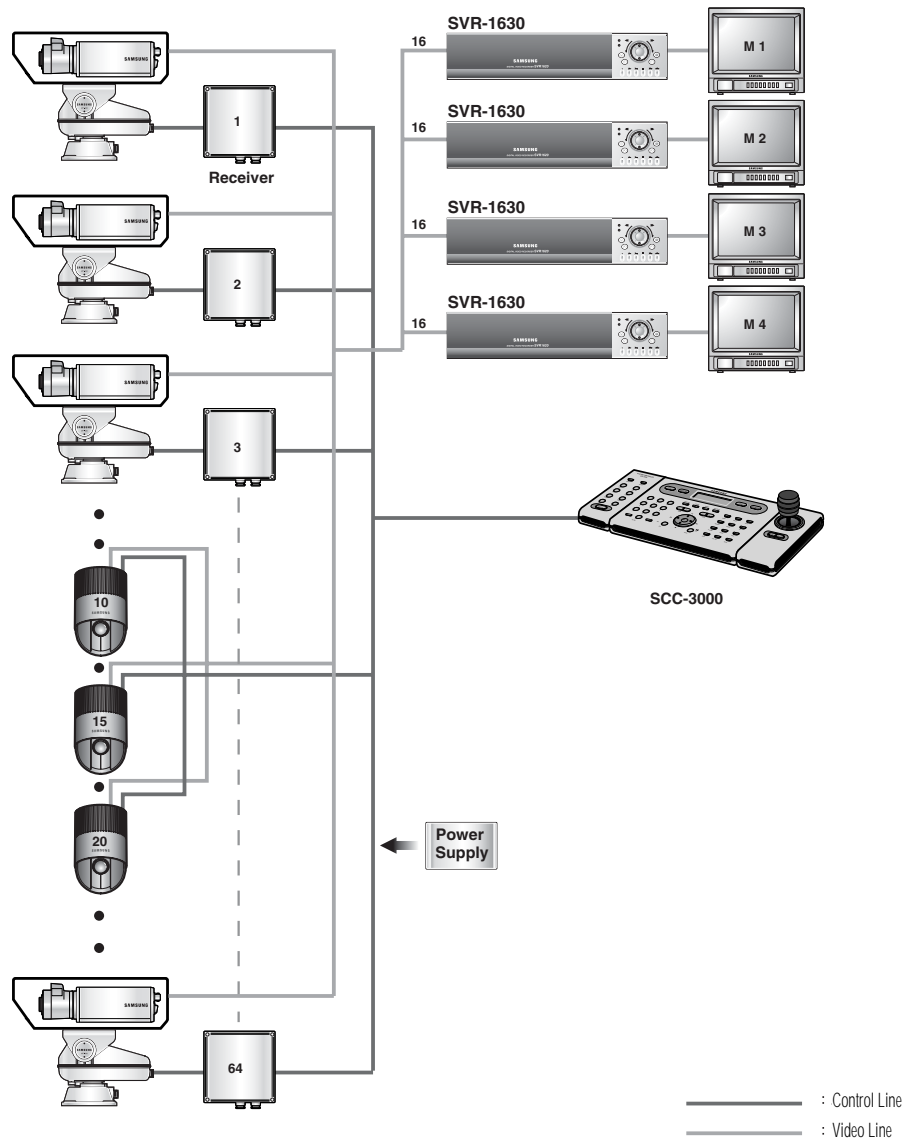
● Installation Method



※ Other Installation Methods : You can use the camera in a variety of circumstances with accessories for outdoor installation that you need to purchase separately. (See Page 17 and 20 for the accessories that you can purchase)



System configuration



Specifications

| Item | NTSC | PAL |
|-------------------------------|---|-------------------------------|
| Image Sensor | 1/4-inch Color Interline-Transfer CCD. 410,000pixel | |
| TV Type | NTSC Type | PAL Type |
| Total Pixels | 811(V) × 508(H) | 795(V) × 596(H) |
| Effective Pixels | 768(V) × 494(H) | 752(V) × 582(H) |
| Horizontal Scanning Frequency | 15.734kHz | 15.625kHz |
| Vertical Scanning Frequency | 59.94kHz | 50.00kHz |
| Synchronization | Internal/External (AC Line Lock) | |
| Video Output | 1.0p-p/75 Ω | |
| S/N Ratio | More than 48dB (AGC OFF) | |
| Horizontal Resolution | 480TV lines | 460TV lines |
| Minimum Illumination | 2.0Lux(Normal)/(@30IRE), 0.3Lux(Day & Night Mode)/(@30IRE) 0.03Lux(Slow-Shutter Mode)/(@30IRE) | |
| Electronic Shutter | Auto/Manual (1/60 ~ 1/10,000) | Auto/Manual (1/50 ~ 1/10,000) |
| Slow-Shutter | ON(x2-x128Fields) /OFF | |
| Backlight Compensation | ON/OFF | |
| White Balance | Auto/AWC/Manual/Outdoor/Indoor | |
| Flickerless control | Shutter speed fixed (1/100) | Shutter speed fixed (1/120) |
| Iris | Auto/Manual (Iris fix mode) | |
| Gain control | Auto/Manual | |
| OSD Display | ON/OFF | |
| Aperture Compensation | Level Controllable | |
| Focal Length | 3.9 ~ 85.8mm (Optic zoom 22x) | |
| Digital Zoom | 10x (Total 220x Zoom) | |
| Max. Focal Ratio | Wide 1:1.6 Tele 1:3.7 | |
| Covering Angle | f=3.9mm 51.26° (H) × 39.03° (V)f=85.8mm 2.39° (H) × 1.80° (V) | |
| Min. Focus Distance | 1.0m (Tele)-0.01m (Wide) | |
| Pan Rotation Angle | 360° Continuous | |
| Pan Rotation | Manual/Program | |
| Pan Speed | Manual : 0.5°/s-120°/s (64 levels) Preset : 0.5°/s-240°/s (64 levels) | |

Specifications

| Item | NTSC | PAL |
|-----------------------------|--|-----|
| Pan Resolution | 0.05° | |
| Pan Rotation Stop Accuracy | 0.30° | |
| Tilt Rotation Angle | +0° ~ 90° (Auto Flip to 180° available by Controller) | |
| Tilt Rotation | Manual/Program | |
| Tilt Speed | Manual : 0.5°/s~120°/s(64 levels) Preset : 0.5°/s~240°/s(64 levels) | |
| Tilt Resolution | 0.04° | |
| Tilt Rotation Stop Accuracy | 0.30° | |
| Preset Position | Max.128 points | |
| Area Masking | 8points | |
| Alarm | Alarm 4 Input | |
| | Alarm 2 OUT(Relay : NC/NO/COM,0.5A 125VAC,2A 30VDC Max) | |
| Operating Temperature | 0°C ~ +50°C | |
| Operating Humidity | 20% ~ 75% (No Condensation) | |
| Storage Temperature | -20°C ~ +60°C | |
| Storage Humidity | 20% ~ 95% (No Condensation) | |
| Power Source, Voltage | AC 24V ± 10% | |
| Power Consumption | 8 Watts in standby, 13 Watts in operation | |
| Dimensions | ∅ 128 × 207.5mm | |
| Weight | Approx. 1.8kg | |
| Environment | Indoor : Indoor Housing (STH-160PI), Indoor embedded Housing (STH-128PE) Outdoor : Outdoor Housing (STH-160PO) Wall Mount : STB-270PW Ceiling Mount : STB-496PP | |

※ External Design and specification are subject to change without notice for improvement of product performance.

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